CITY OF LINCOLN
AD HOC WATER RATE COMMITTEE
MEETING #4 – AGENDA
Monday, April 17, 2017, 3:00 PM
City Hall – First Floor Meeting Room

I. Introductions

II. Comments from Committee Members

II. Recap of Reserve and CIP Goals

III. Cost of Service Analysis

IV. Review of Proposed Rate Structures

V. Schedule Next Committee Meeting

RAFTELIS
FINANCIAL CONSULTANTS, INC.

City of Lincoln Water Rate Study

Ad Hoc Water Rate Committee

Meeting #4 – April 17, 2017

TODAY'S AGENDA

1. Review CIP and Reserve Goals
2. Recap Pricing Objectives
3. Review Preferences from "Homework" survey
4. Today's Focus – Cost of Service and Potential Rate Structure Options
5. Next Steps – Date and Topics

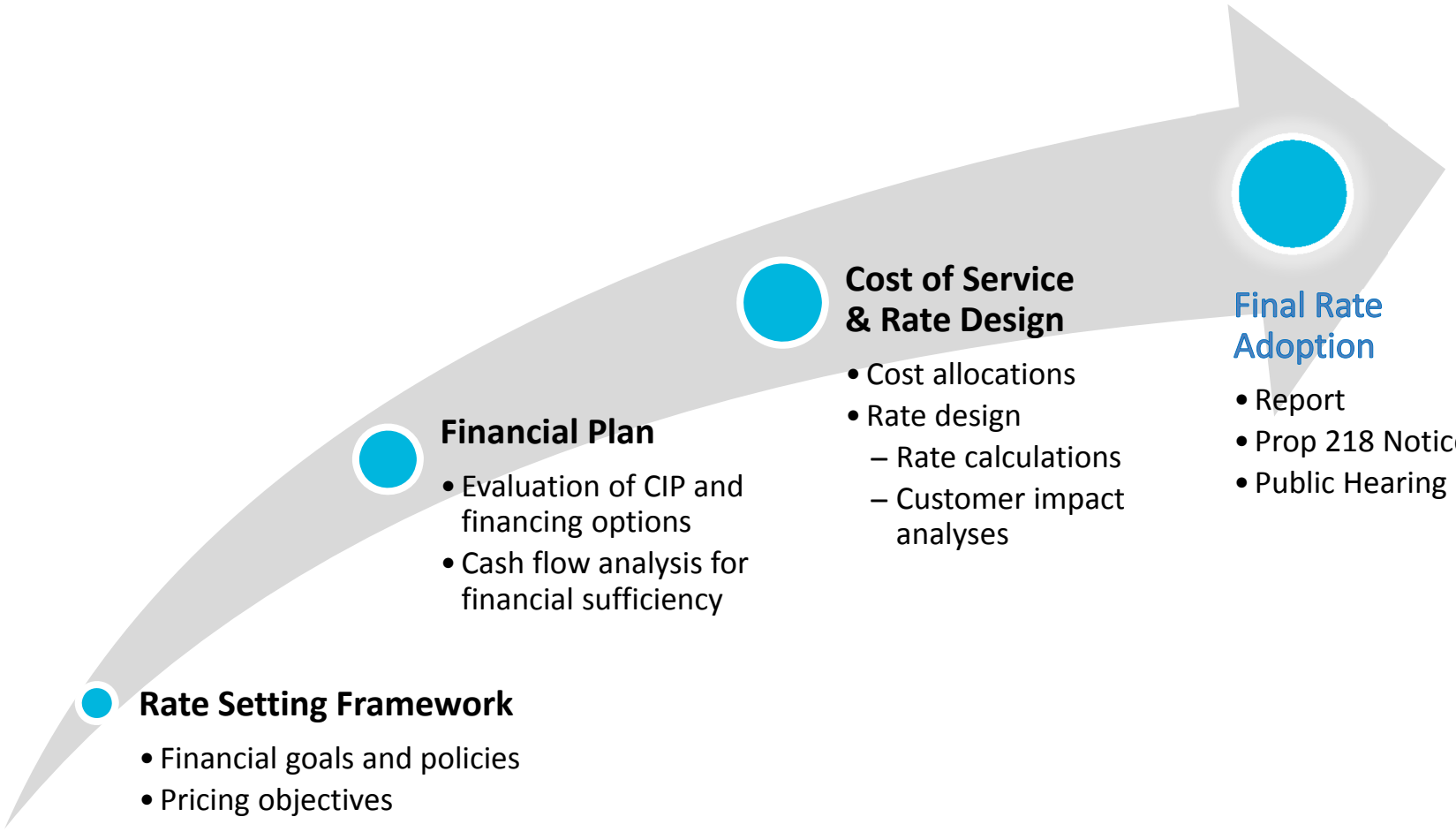
REVISED SCHEDULE

Task #	Task Descriptions	Due on or before:
1.2	Project Management and Initiation/Kick-off	February 3
	City Provides Data per Data Request	
2	Financial Plan Model Development	End of February
3	Financial Plan Workshop	Week of March 6, March 20
4	Cost of Service Analysis	~~Beginning of~~ Mid March
5.1	Calculate Water Rates	Mid ~~March~~ April
5.2	Perform Customer Impact Analysis	Mid ~~March~~ April
6	Rate Workshop	~~Beginning of~~ Mid April

REVISED SCHEDULE CONT'D

Task #	Task Descriptions	Due on or before:
7.1	Draft Report	4/14 – ~~End of April~~ Mid May
7.2	Finalized Report	4/28 – ~~Mid May~~ End of May
7.3	Rate Study Presentation	5/9 – end of May or early June
8	Proposition 218 Public Hearing	7/25
9	Proposition 218 Assistance (Optional Task)	

Steps in Conducting a Rate Study



Financial Plan
Policies & Assumptions

COMMITTEE SURVEY RESULTS: O&M RESERVE AND CIP LEVELS

Timestamp	Suggested Level of Operating Reserves	Suggested Level of Capital Reserves	Include AMI in CIP?	Include 5MG storage tank (estimated cost $5.5 million) in CIP?	Preferred Pipeline Repair and Replacement Schedule
3/23/2017 14:30:36	25%	$2,500,000	No	Possibly with debt financing	Medium (approx. $3.6 M/year)
3/23/2017 15:06:14	33%	Avg. Annual CIP Budget	Yes	Yes	Medium (approx. $3.6 M/year)
3/23/2017 16:39:15	37.50%	Average Annual CIP Budget	Possibly with Debt Fin.	Ok, if use existing Cap. Res.	Medium (approx. $3.6 M/year)
3/23/2017 17:58:00	33%	Average Annual CIP Budget	Maybe Later	Ok, if use existing Cap. Res.	Medium (approx. $3.6 M/year)
3/24/2017 10:32:59	33%	Average Annual CIP Budget	Possibly with Debt Fin.	Possibly with debt financing	Medium (approx. $3.6 M/year)
3/24/2017 11:21:40	33%	Average Annual CIP Budget	Possibly with Debt Fin.	Ok, if use existing Cap. Res.	Medium (approx. $3.6 M/year)
3/24/2017 12:25:03	33%	Average Annual CIP Budget	Maybe Later	Ok, if use existing Cap. Res.	Medium (approx. $3.6 M/year)
3/25/2017 14:37:07	33%	Average Annual CIP Budget	Maybe Later	Yes	Medium (approx. $3.6 M/year)
3/27/2017 6:12:47	25%	ongoing monthly set asides.	Maybe Later	No	Medium (approx. $3.6 M/year)
3/27/2017 10:56:25	33%	Average Annual CIP Budget	Yes	Yes	Medium (approx. $3.6 M/year)
3/27/2017 12:35:51	33%	$1,000,000	Possibly with Debt Fin.	Ok, if use existing Cap. Res.	Medium (approx. $3.6 M/year)
3/30/2017 13:17:36	50%	Average Annual CIP Budget	Possibly with Debt Fin.	Yes	Medium (approx. $3.6 M/year)
	33.46%				

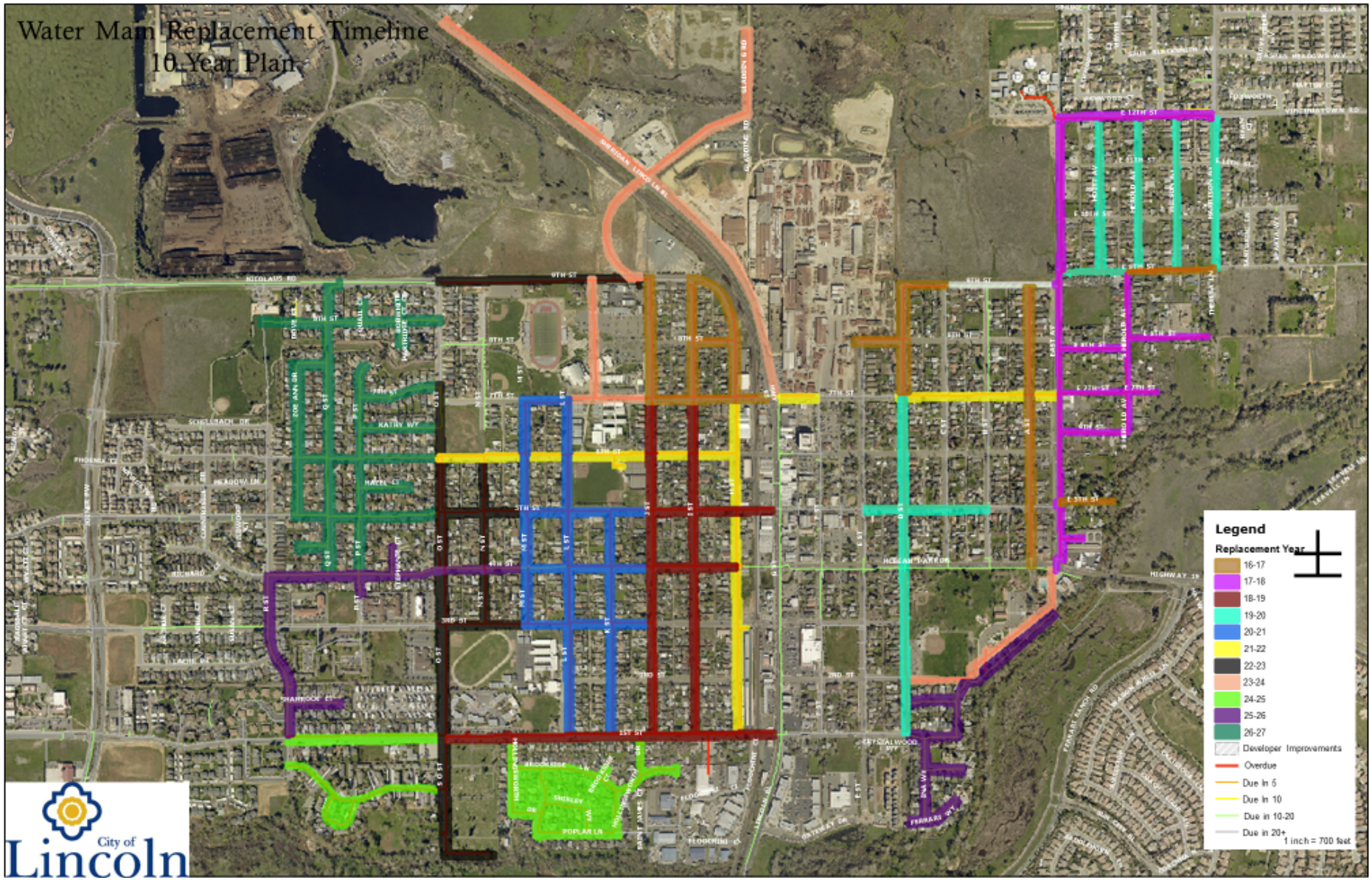
Committee Survey Results: Reserve Recommendations

	Reserves	Target Levels	Bases
☑	**Operating Reserve**	≈ 120 days 33% of O&M Survey results: 32.5%	Monthly billing
☑	**Capital Reserve**	1 Year of Average CIP Expenditure	Industry Norm

Committee Survey Results: CIP Recommendations

- 3 MG Tank – Maintenance and repairs - FYs 2017-2018
- 5 MG Storage Tank - $5.5 M – FYs 2020-2021 – Ok
- Systematic annual pipeline upgrade/replacement
  - **Low – $2.6M/yr, 16 yrs to replace overdue pipes**
  - **Medium - $3.6M/yr, 10 yrs to replace overdue pipes**
  - **High - $6.8M/yr, 5 yrs to replace overdue pipes**
- AMI Meter Program - $7.2 M – FYs 2019-2021 – No (never/not now/maybe later with debt funding/yes)

Water Line Replacement – Medium CIP



Pricing Objectives Recap

City of Lincoln Water Rate Study Committee - Pricing Objectives Homework Assignment Ranking Results

Pricing Objective	#1	#2	#3	#4	#5	#6	#7	#8	#9	Average	Most 1's	Most 6's	Range**
Administrative Ease & Understanding	5	5	5	4	5	1	6	6	4	4.6			1-6
Affordability	2	1	1	3	4	3	3	1	1	**2.1**	**4**		1-4
Conservation	6	6	6	6	6	5	4	4	6	5.4		**6**	4-6
Equity & Fairness	4	3	2	5	3	4	5	3	5	3.8			2-5
Financial Stability	1	2	3	1	1	2	1	2	2	**1.7**	**4**		1-3
Revenue Stability	3	4	4	2	2	6	2	5	3	3.4			2-6

ALTERNATIVE WATER RATE STRUCTURES

Pricing Objectives	Uniform	Tiered
Revenue Stability	● ● ●	● ●
Simple to Understand, Administer and Update	● ● ● ●	● ● ●
Promotes Conservation/Efficiency	● ●	● ● ●
Affordable for Essential Use	● ●	● ● ●
Equity / Fairness	● ● ●	● ● ● ●
Financial Stability	● ● ● ●	● ● ● ●

Must be cognizant of current rate structure and how changes may impact customers

Recent Water Demand

Table ES-1 – Recent City Population and Annual Water Demand

Year	Population	Gross Water Use (af/yr)
2010	42,819	9,203
2011	43,142	9,481
2012	43,915	10,091
2013	44,336	10,858
2014	45,259	8,948
2015	45,837	7,628

City of Lincoln Public Review Draft Water Master Plan 2016, page E-S 9.

"Normalized" demand estimated at 10,174 AF by Tully and Young.

Projected Water Sales in Model

	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Demand Factor		110.0%	106.0%	103.0%	103.0%	102.5%	102.0%	102.0%
Total Sales (AF)	6,548	7,203	7,630	7,945	8,274	8,574	8,842	9,019

- **More conservative – does not overstate water revenue**
- **May underestimate need to pay for extra capacity (Water Connection Charge)**

Revenue Adjustments – Medium CIP (No AMI)

- Currently Adopted FY 2018 Revenue Adjustment is 11%

Dashboard Control Panel		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Revenue Adjustment			7.0%	5.0%	5.0%	5.0%	3.0%	3.0%
Effective Month		Jul	Jul	Jul	Jul	Jul	Jul	Jul
Demand Factor		110.0%	106.0%	103.0%	103.0%	102.5%	102.0%	102.0%
Net Operating Revenue		$3,807,475	$4,450,053	$4,791,476	$5,109,001	$5,404,663	$5,331,090	$5,133,167
Total Sales (AF)		7,203	7,630	7,945	8,274	8,574	8,842	9,019
Transfer to Fund 711					$4,250,000	$1,000,000		
Debt Issuance Amount								
CIP Option	Medium Project Delivery							
Financial Policy								
Operating Reserve	33.0%	of O&M						
Capital Reserve	100.0%	of one-yr. avg. CIP						
Required Debt Coverage	125.0%							

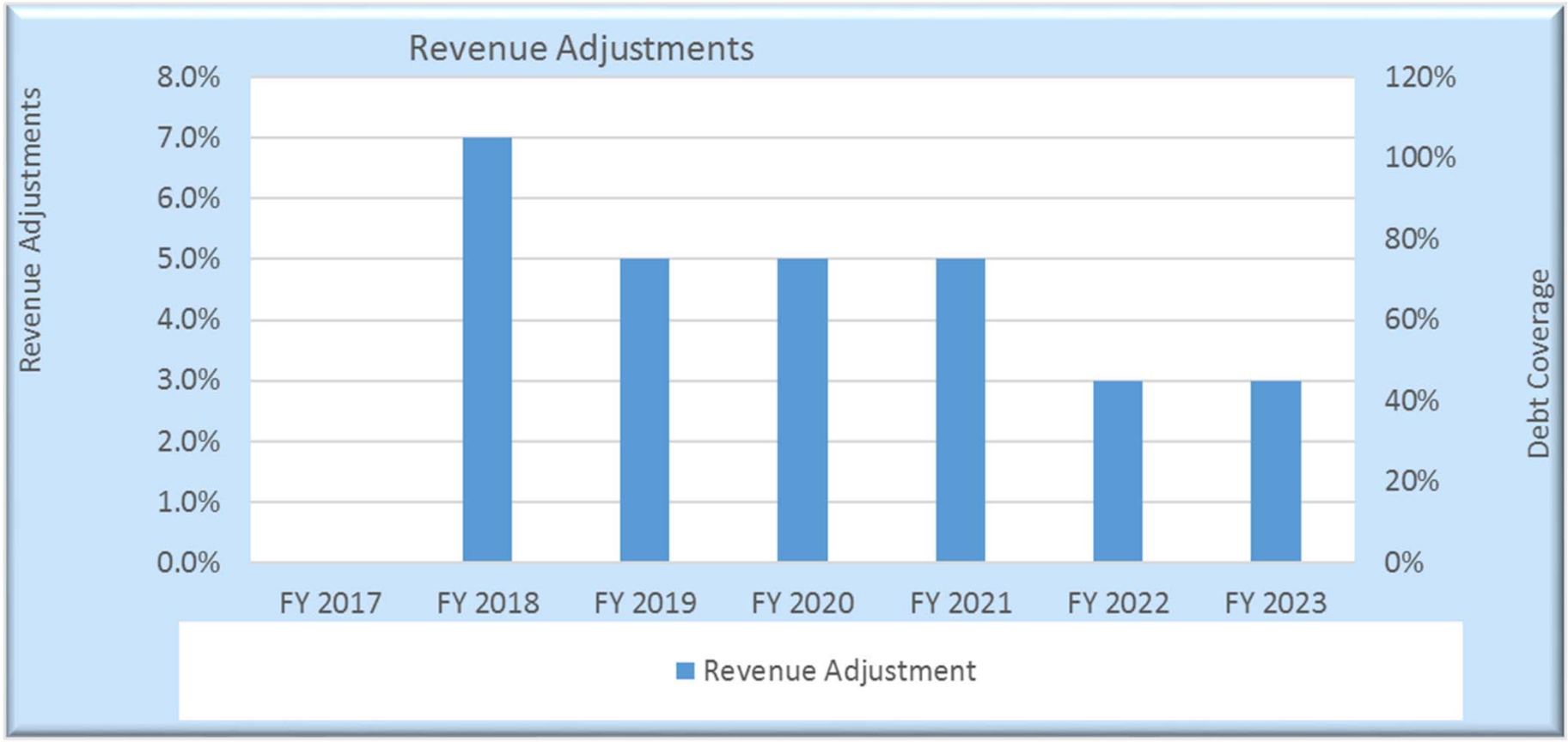
What Affects Your Revenue Requirement (Costs)

- PCWA
  - Proposed 10% rate increase FY 2017-18
  - CPI/inflation rate increases after FY 2017-18
  - Increase to percentage of costs recovered by meter charge
- CIP
  - Increase to medium level of pipeline replacement
- O&M

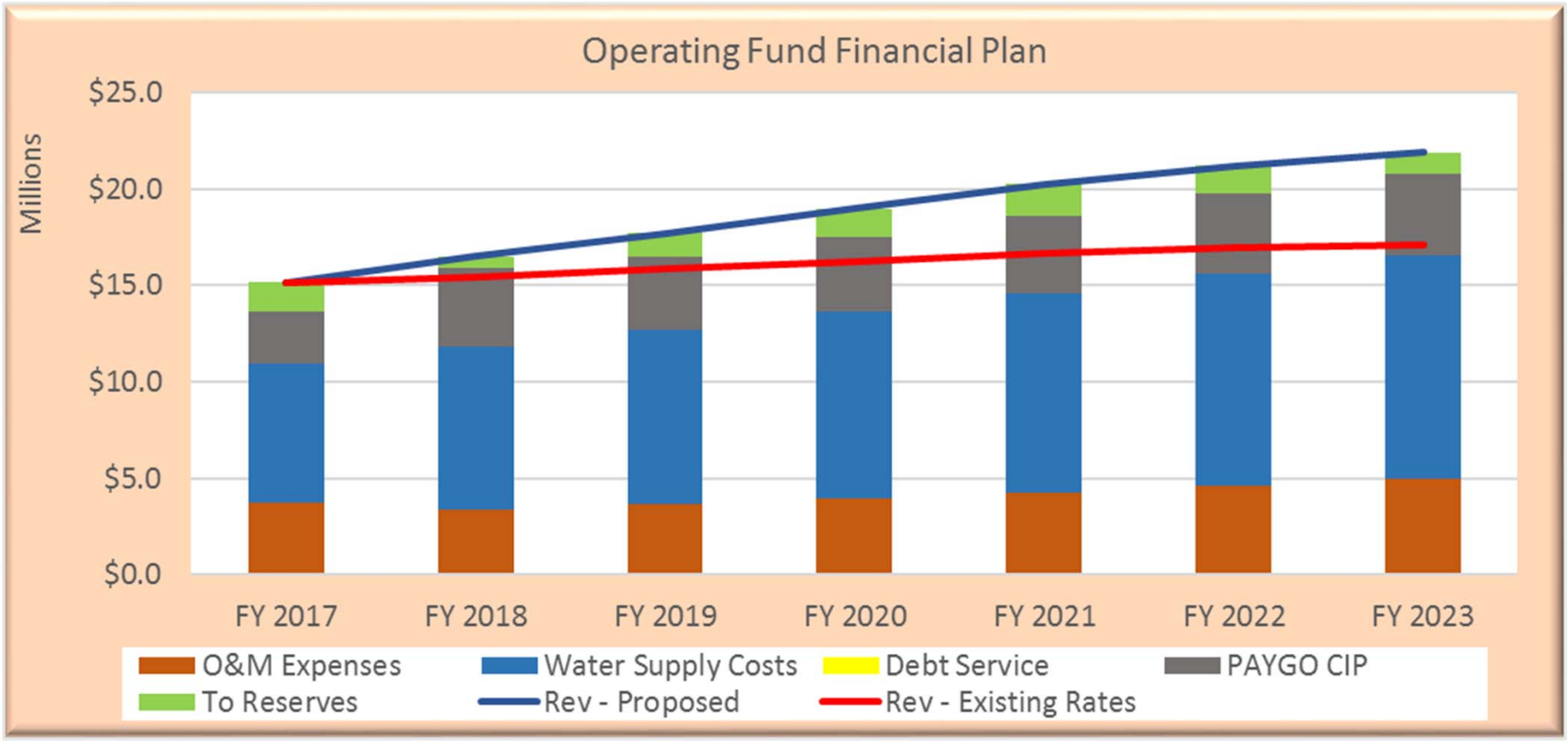
Revenue Requirement

	FY 2018			
	Operating	Capital	Additional Capacity	Total
Revenue Requirements				
Water Purchases	$8,447,895			**$8,447,895**
Other Operating Costs	$3,406,009			**$3,406,009**
Additional Capacity Costs			$216,125	**$216,125**
Rate Funded Capital Costs		$4,031,420		**$4,031,420**
Total Revenue Requirements	**$11,853,903**	**$4,031,420**	**$216,125**	**$16,101,448**
Less: Revenue Offsets				
Non-Operating Revenue	$212,826			**$212,826**
Total Revenue Offsets	**$212,826**	**$0**	**$0**	**$212,826**
Less Adjustments				
Adjustment for Cash Balance	-$418,633			**-$418,633**
Adjustment for Mid-Year Increase	$0			**$0**
Total Adjustments	**-$418,633**	**$0**	**$0**	**-$418,633**
Revenue Requirement From Rates	**$12,059,711**	**$4,031,420**	**$216,125**	**$16,307,256**

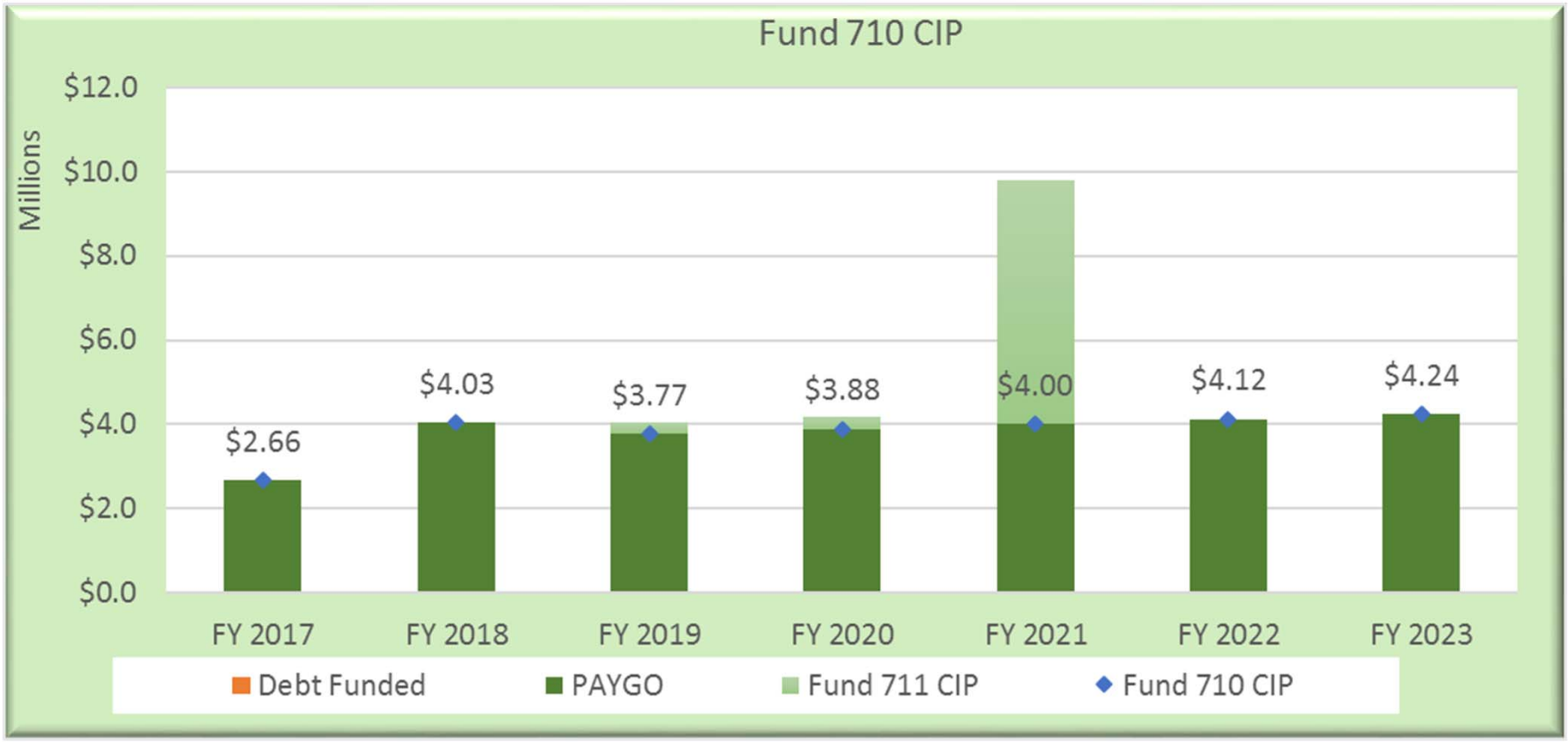
Revenue Adjustments - Medium CIP (No AMI)



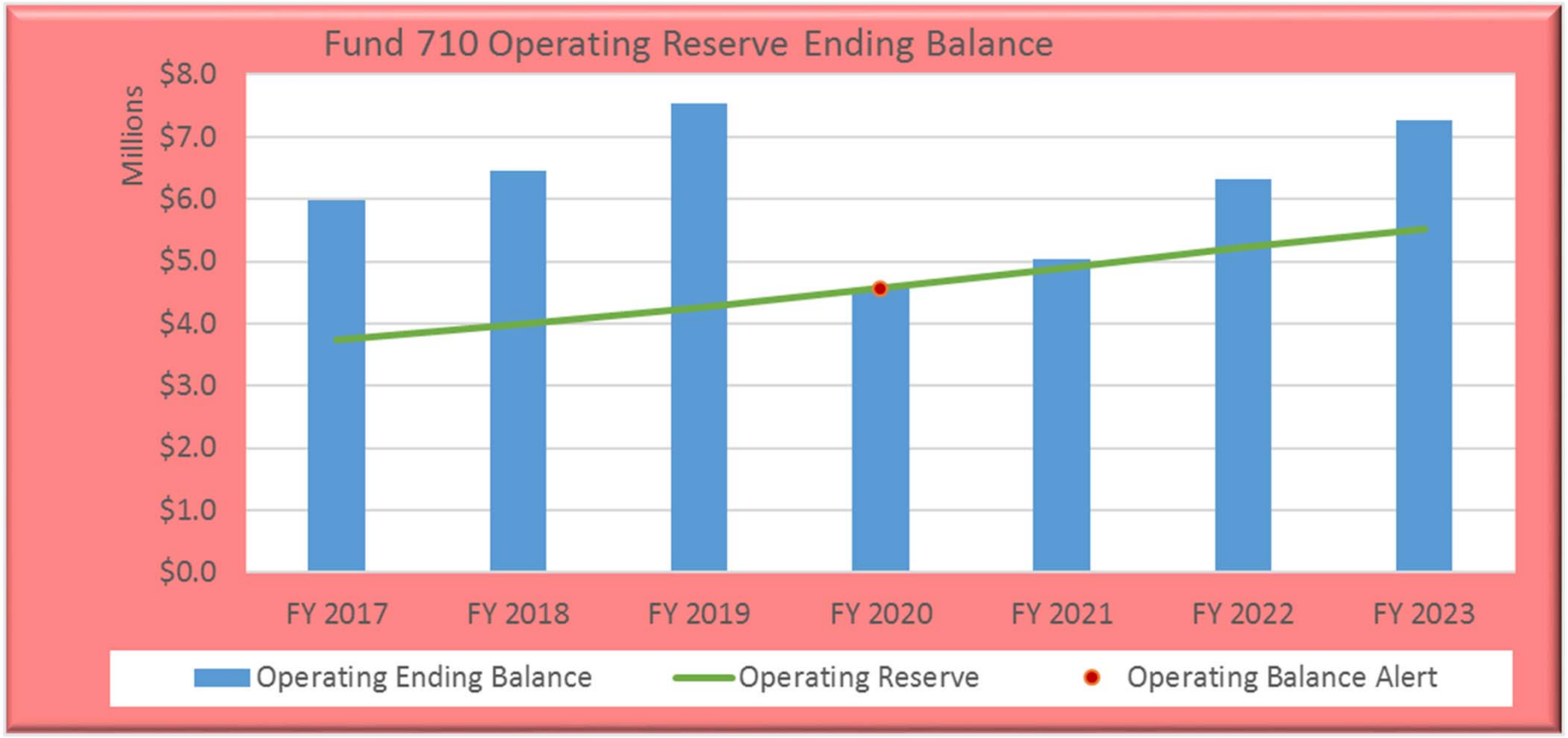
Financial Plan Results – Medium CIP (No AMI)



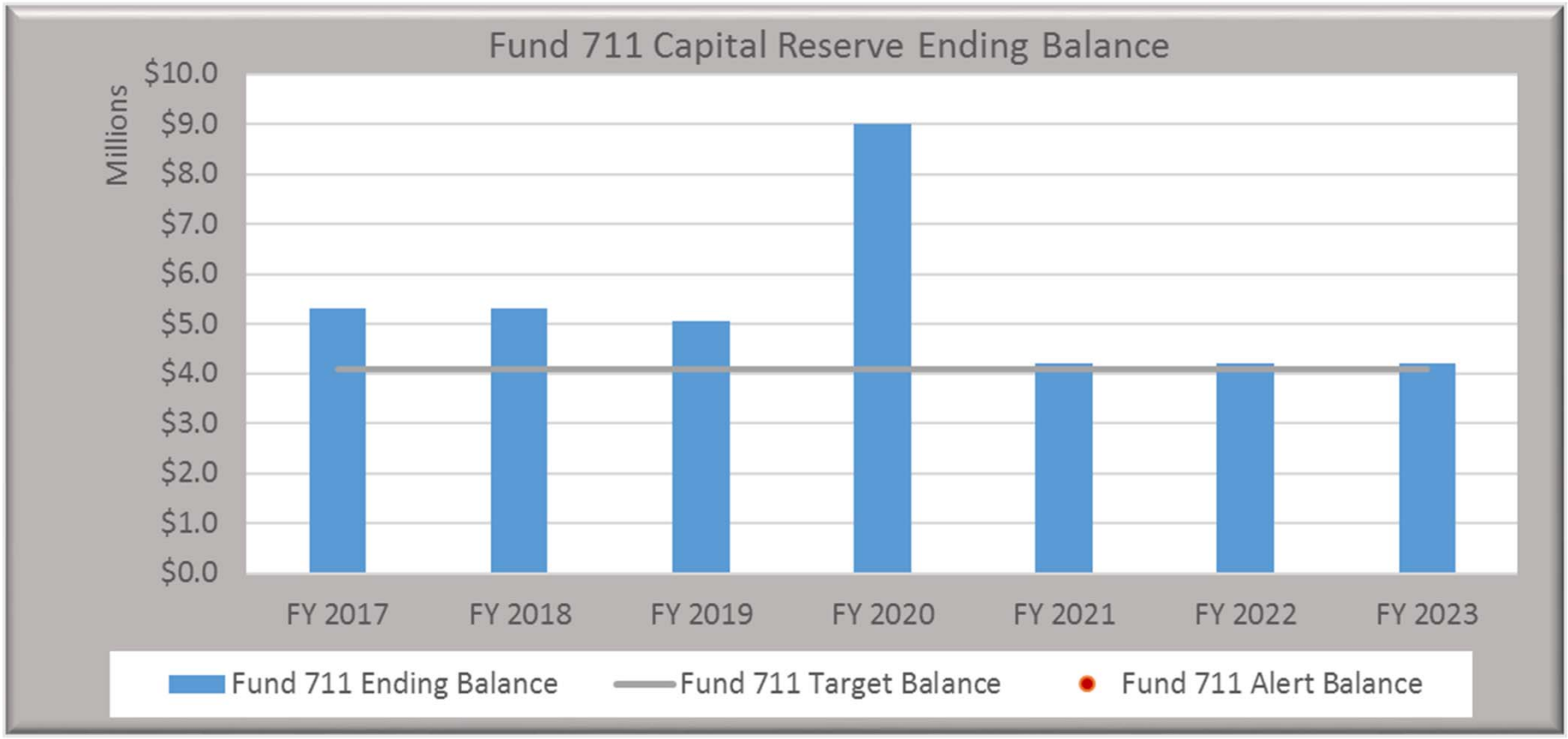
CIP Annual Expenditures - Medium CIP (No AMI)



Operating Fund Balances - Medium CIP (No AMI)

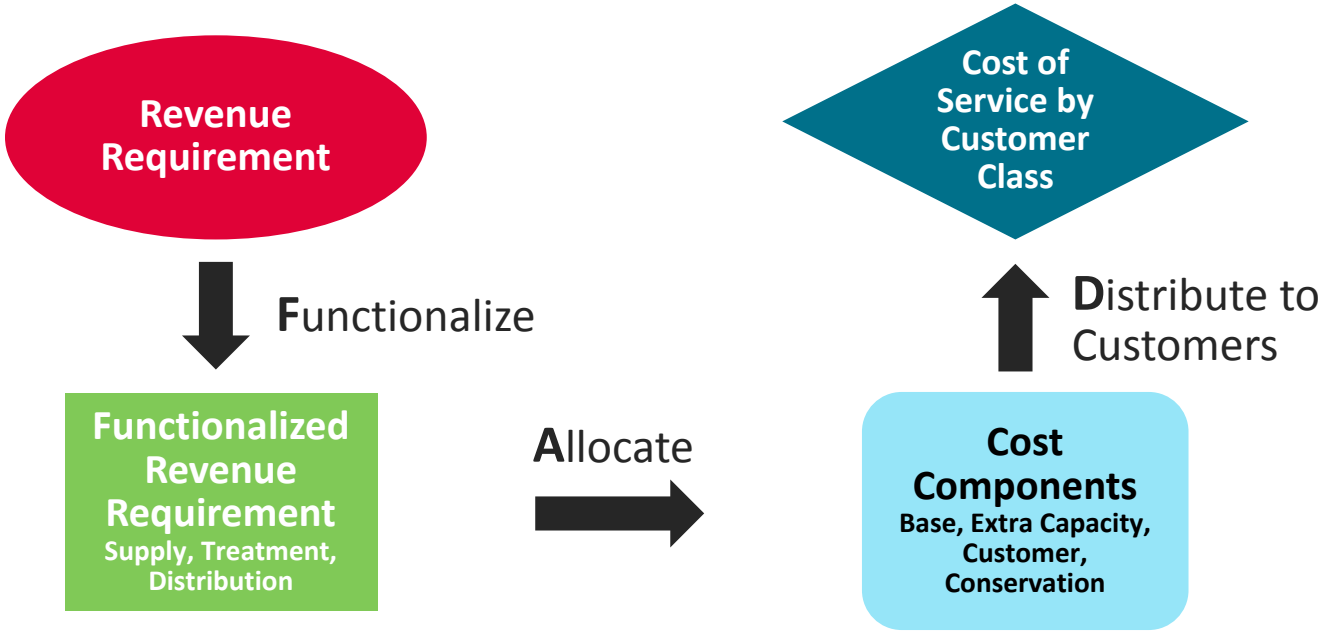


Fund 711 Ending Balances - Medium CIP (No AMI)



Cost of Service Analysis

Cost of Service



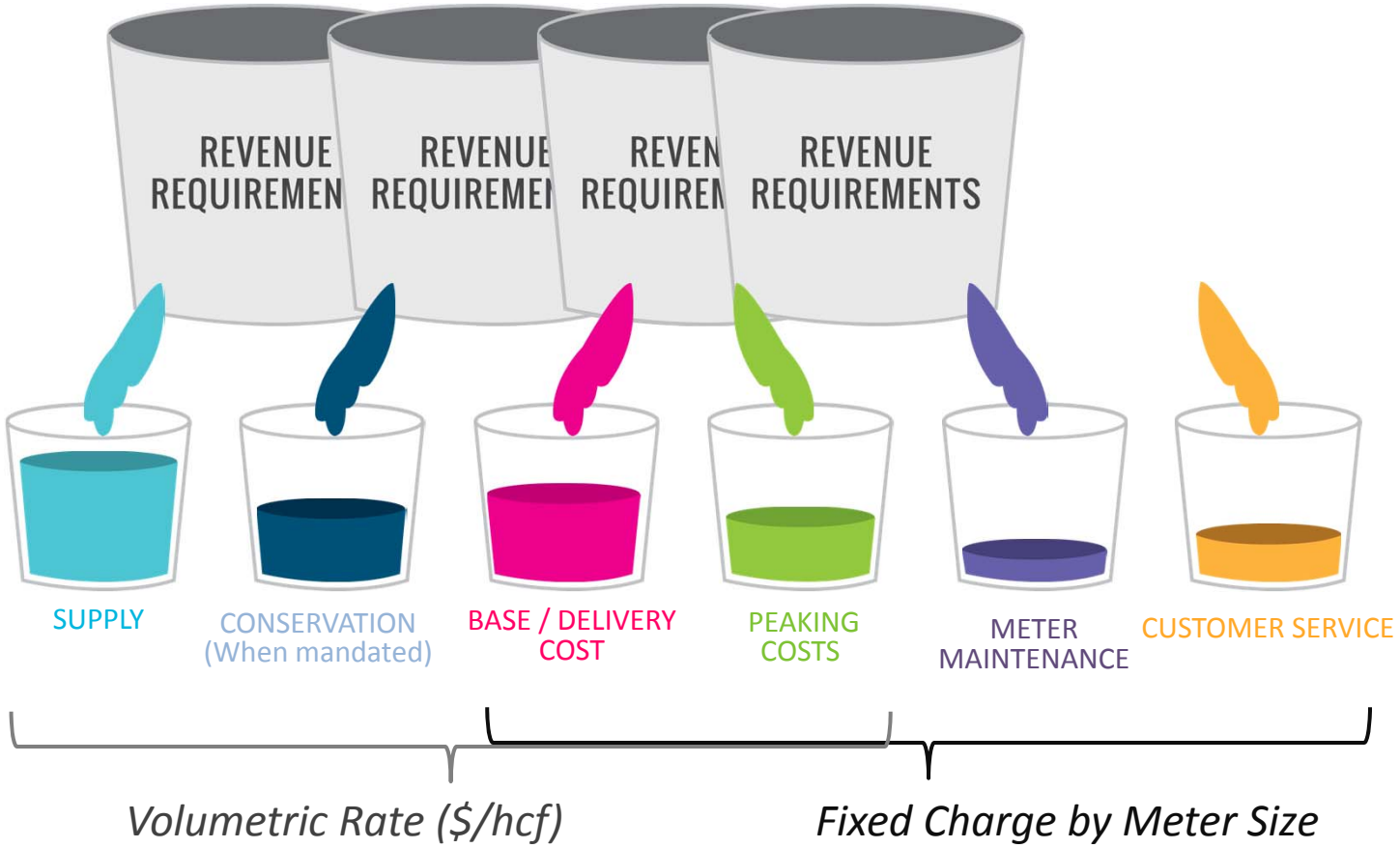
- Calculates who (customer class) pays how much
- Recovers costs from customer classes in proportion to the demands they place on the system, recognizing each classes' impact on the costs to run system facilities
- Cost of Service is the fundamental methodology used to establish utility rates in the United States

WHAT IS **COST OF SERVICE?**

Rationale:

- Each customer class causes costs differently because their patterns of use or characteristics are different
- Cost of service allows the matching of rates charged to each group with the costs of serving them
- Each group will “pay its own way”; no subsidies

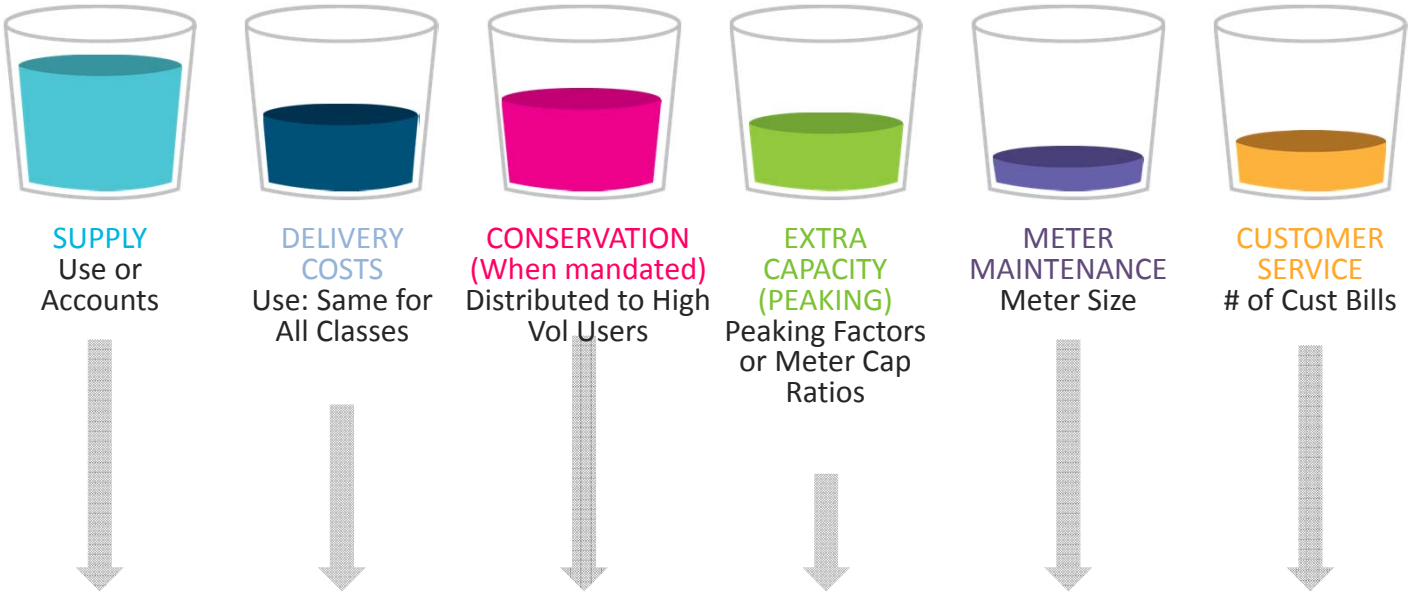
WATER COST OF SERVICE - ALLOCATION TO COST COMPONENTS



BASE-EXTRA CAPACITY **METHOD**

- **Water Supply:** Variable costs that vary with total quantity of water used
- **Base:** O&M expenses and capital costs associated with service to customers under average load conditions (base use)
- **Peaking (or Extra Capacity) Costs:** costs associated with meeting peak demand in excess of base (average daily demand) use
  - Max day extra demand
  - Max hour extra demand
- **Meter Maintenance:** maintenance and capital costs related to meters
- **Customer Service:** costs associated with serving customers, irrespective of the amount or rate of use
  - Meter reading, billing, customer accounting, customer service, collecting expense
- **Fire:** costs that apply solely to the fire protection function
  - Public hydrants
  - Related branch mains and valves

DISTRIBUTE COST COMPONENTS TO CUSTOMER CLASSES



Develop Units Rates for each Cost Component (Bucket), which are used to Distribute Costs to Each Class

CUSTOMER CLASSES (Cost to Serve Each Class)
(Single Family, Multi-family, Commercial etc.)

Rate Structures & Bill Impacts

Fixed Charge Derivation

- Fixed Revenue collection is approximately 56%

Cost Component	Amount	Reallocated for Fixed/Variable Revenue	Fixed Charge	Volumetric Rate	Basis
Customer Service	$878,676	$958,607	X		
Meter Capacity	$498,158	$7,662,281	X		Contains Meter service costs and max day and hour costs
Fire	$517,635	$564,723	X		
Water Purchase Cost	$8,620,565	$5,390,881	37%	63%	In proportion to prior PCWA Fixed Charges ratio
Base	$1,388,346	$1,514,640	Reallocated to Meter Capacity		To meet fixed revenue goals
Max Day	$1,282,300	$0		X	35% of Max Day reallocated to the Meter charge
Max Hour	$2,282,539	$0		X	35% of Max Hour reallocated to the Meter charge
PCWA Peaking	$216,125	$216,125		X	
General	$622,912	$0	Reallocated to other Cost Components		In proportion to the other cost components
Total	**$16,307,256**	**$16,307,256**	**$9,185,610**	**$7,121,645**	

Comparison of Volumetric Rate Structures

UNIFORM RATE

- **Can be by customer class or one uniform rate for all users**
- **Meter charge + constant volumetric charge:** $xx / hcf
- **Pros:** Revenue stability, administrative ease, easy to understand
- **Cons:** Weak conservation, not as affordable for essential use

INCLINING TIERED RATE

- **Meter charge + volumetric charge that increases in each tier as water use increases**
- **Pros:** Promote conservation, affordable for essential use, easy to administer, easy to understand
- **Cons:** Target large users

Uniform Rate Calculations

Line #	Regulated Uniform Rate Component Calculation Source	Total
1	Variable Costs to be Recovered	$6,905,520
2	Total Use	2,486,121
3	**Uniform Rate for Regulated Customers**	**$2.78**

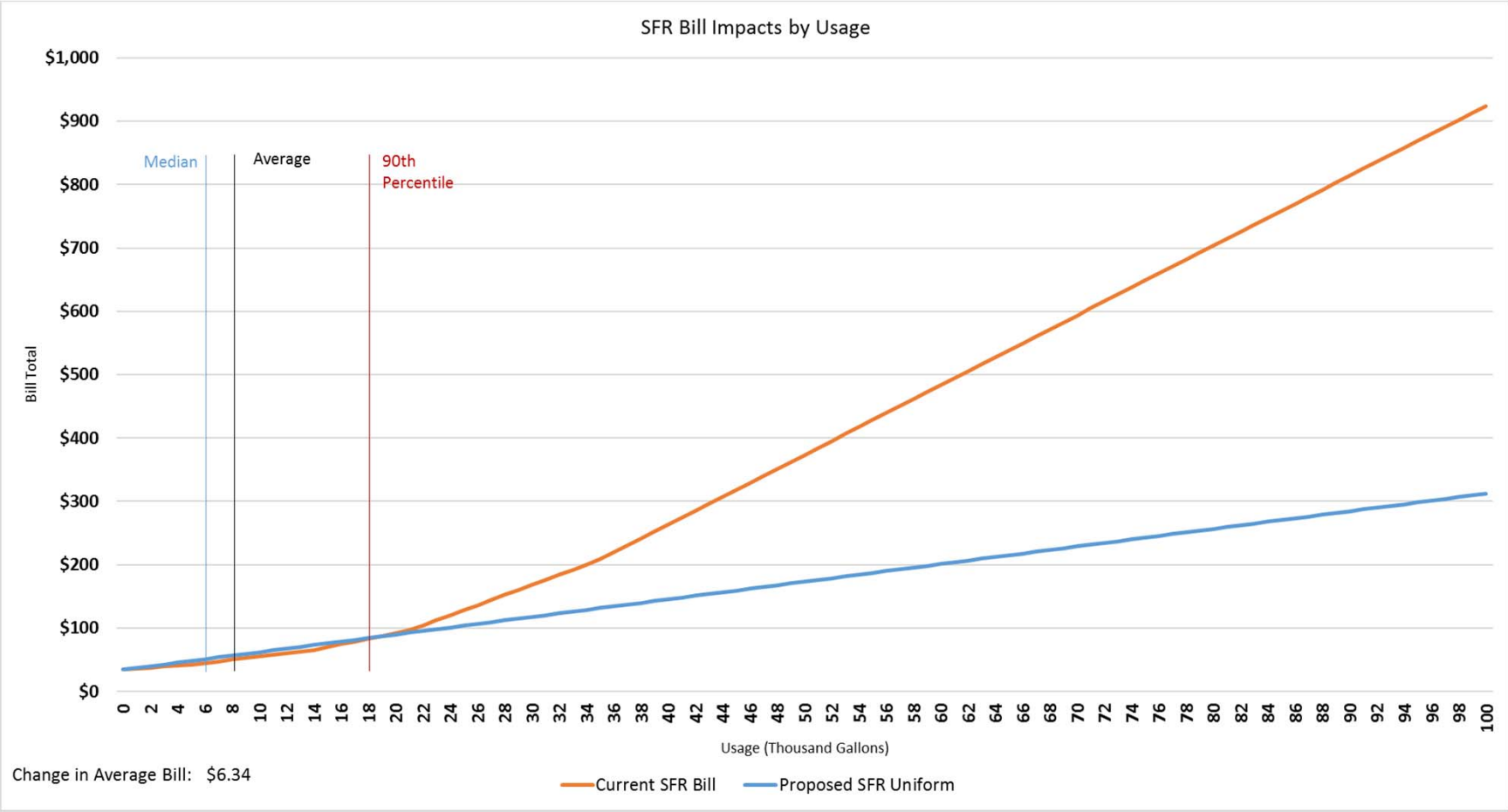
Line #	Unregulated Uniform Rate Component Calculation Source	Total
1	Additional Capacity Cost	$216,125
2	Verdera Total Use	134,908
3	Additional Capacity Rate	$1.60
4	Uniform Rate for Regulated Customers	$2.78
5	**Uniform Rate for Unregulated Customers**	**$4.38**

Tiered Volumetric Rates

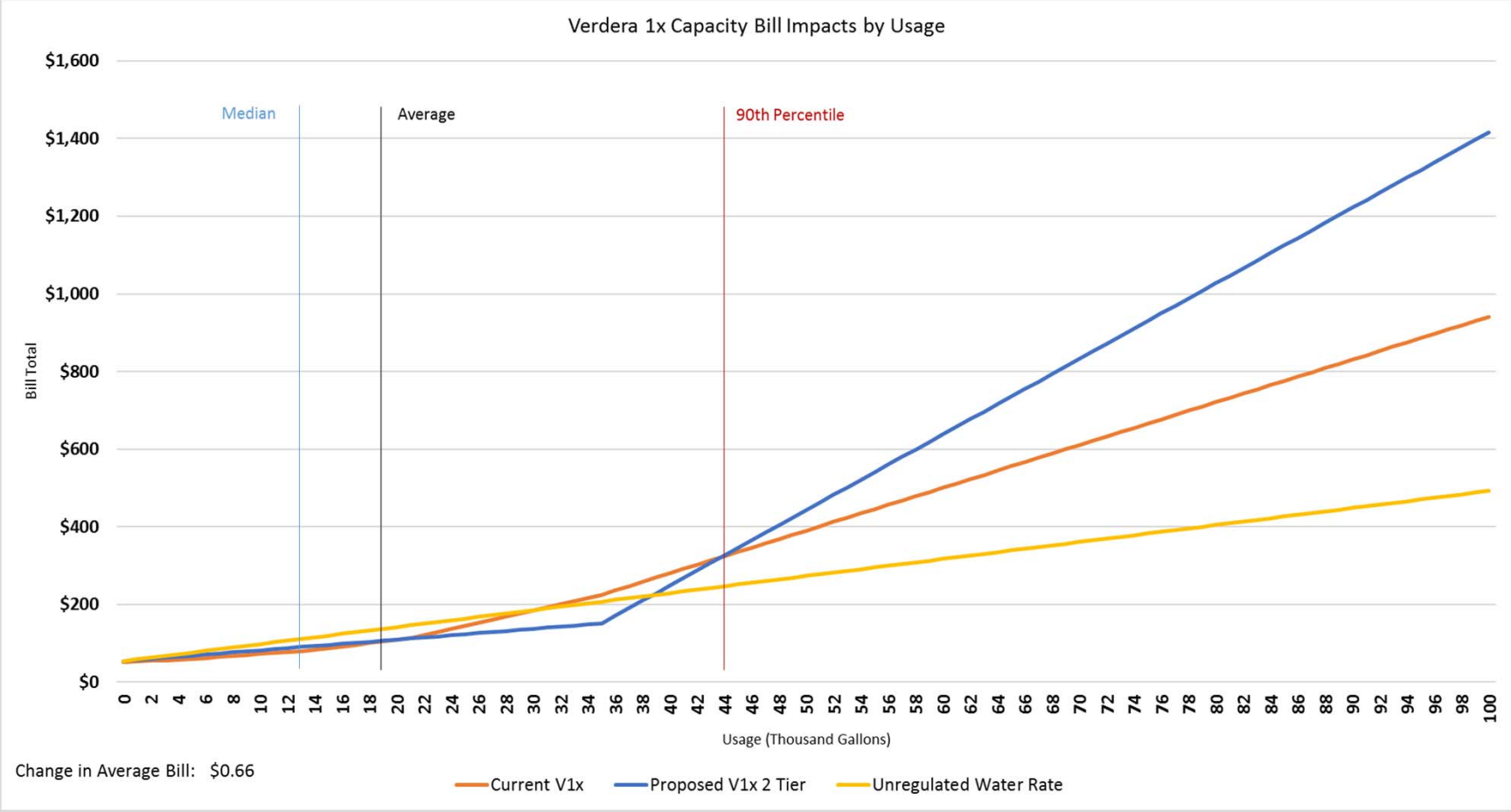
- Funding for Additional Capacity from PCWA is included in Tier 2 for the Verdera customers

Line #	Class	Tier Width	Supply Rate (a)	Base Rate (b)	PCWA Additional Capacity (d)	Total Rate (e)
1	**SFR**					**$2.78**
2	**Verdera 1x Capacity**					
3	Verdera 1x Capacity Tier 1	35,000 Gallons	$2.17	$0.61		**$2.78**
4	Verdera 1x Capacity Tier 2		$2.17	$0.61	$17.07	**$19.85**
5	**Verdera 13-17, 19 (2.5 x EDUs)**					
6	Verdera 13-17, 19 Tier 1	83,000 Gallons	$2.17	$0.61		**$2.78**
7	Verdera 13-17, 19 Tier 2		$2.17	$0.61	$17.07	**$19.85**
8	**Verdera 20 (1.5 x EDUS)**					
9	Verdera 20 Tier 1	53,000 Gallons	$2.17	$0.61		**$2.78**
10	Verdera 20 Tier 2		$2.17	$0.61	$17.07	**$19.85**
11	IND and NR		$2.17	$0.61		**$2.78**
12	MFR		$2.17	$0.61		**$2.78**
13	Irrigation		$2.17	$0.61		**$2.78**
14	Hydrant (Construction)		$2.17	$0.61		**$2.78**

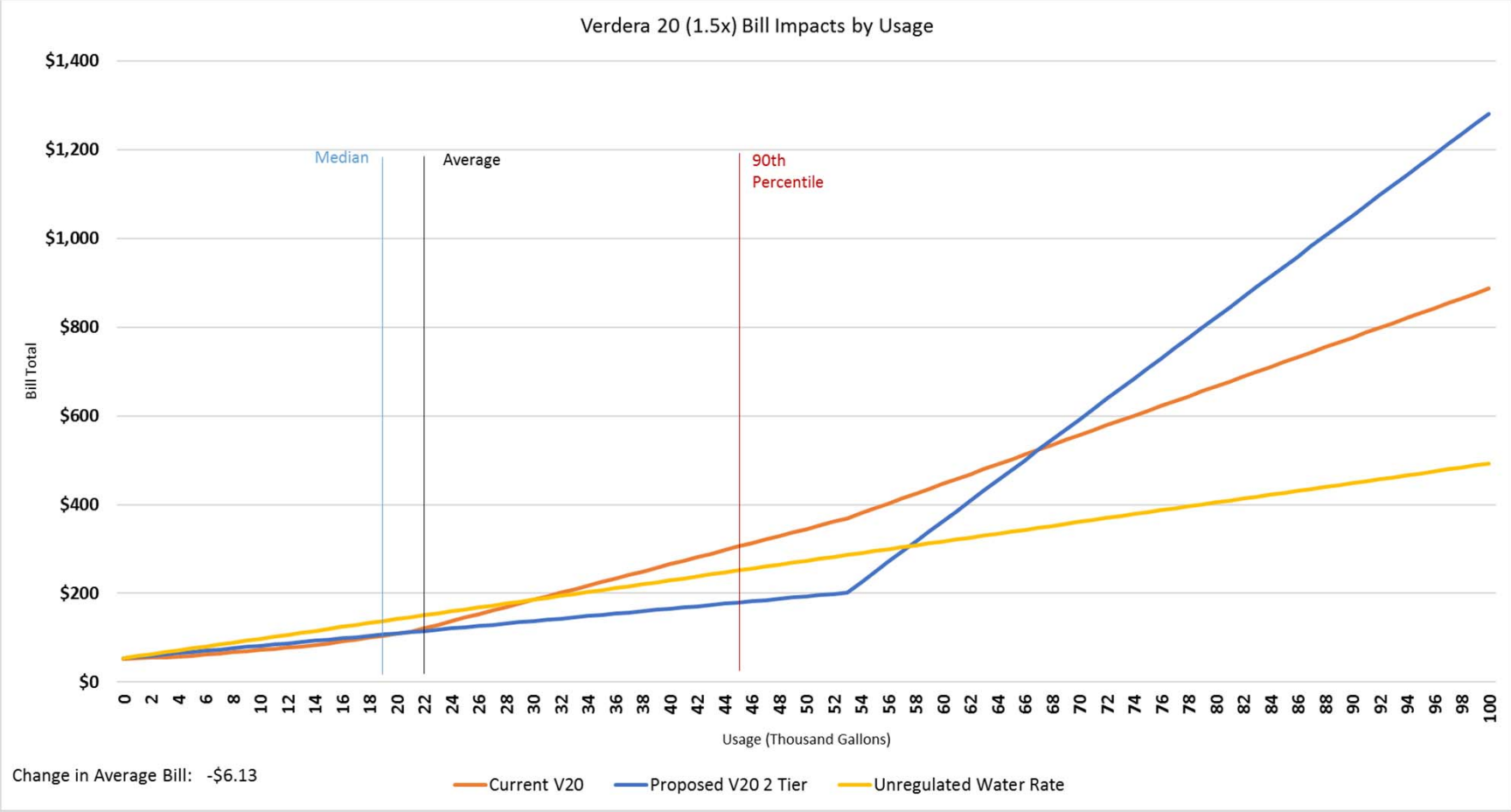
SFR Regulated (Non-Verdera) Bills by Use



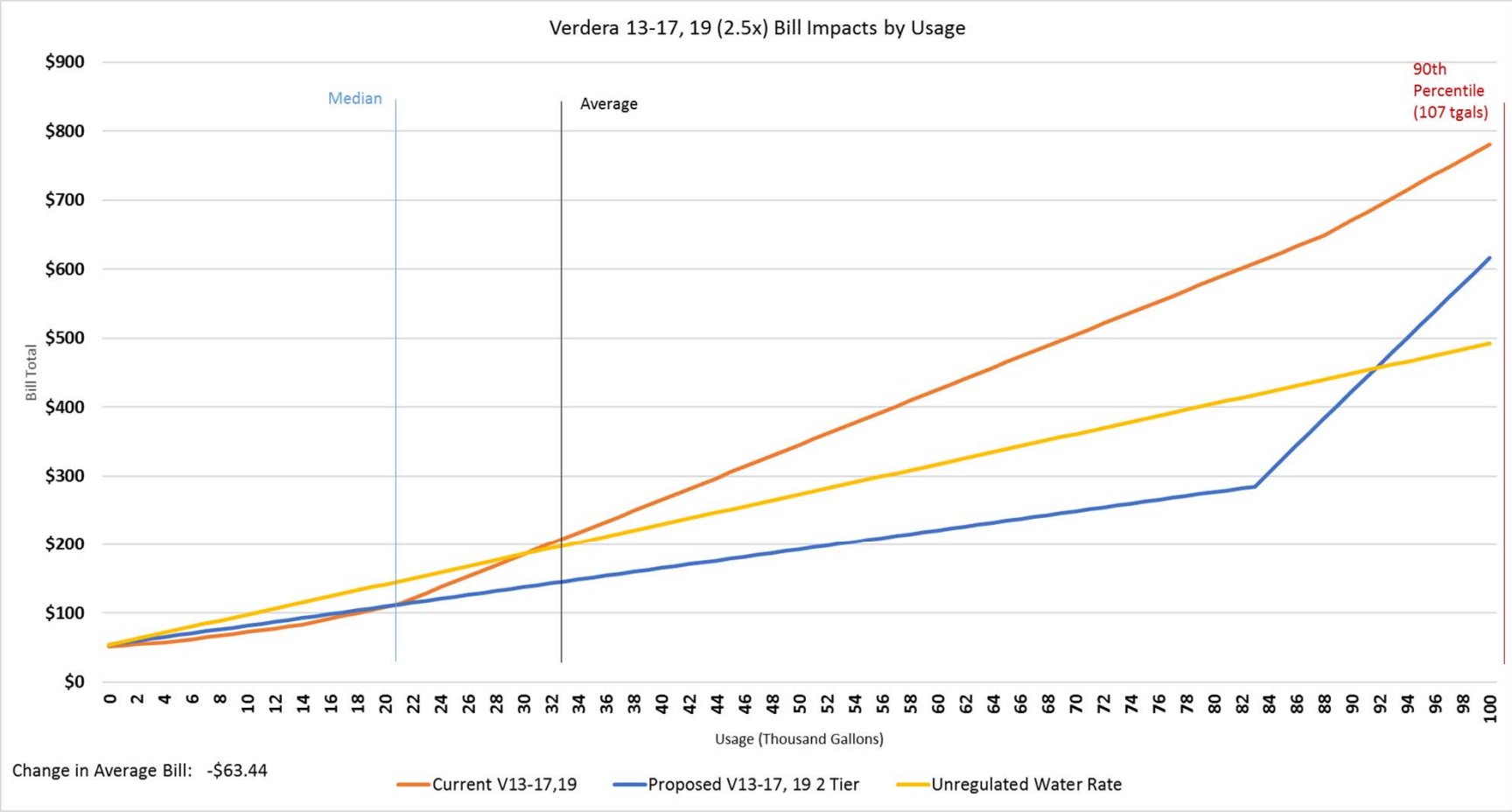
VERDERA CUSTOMERS (1.0X)



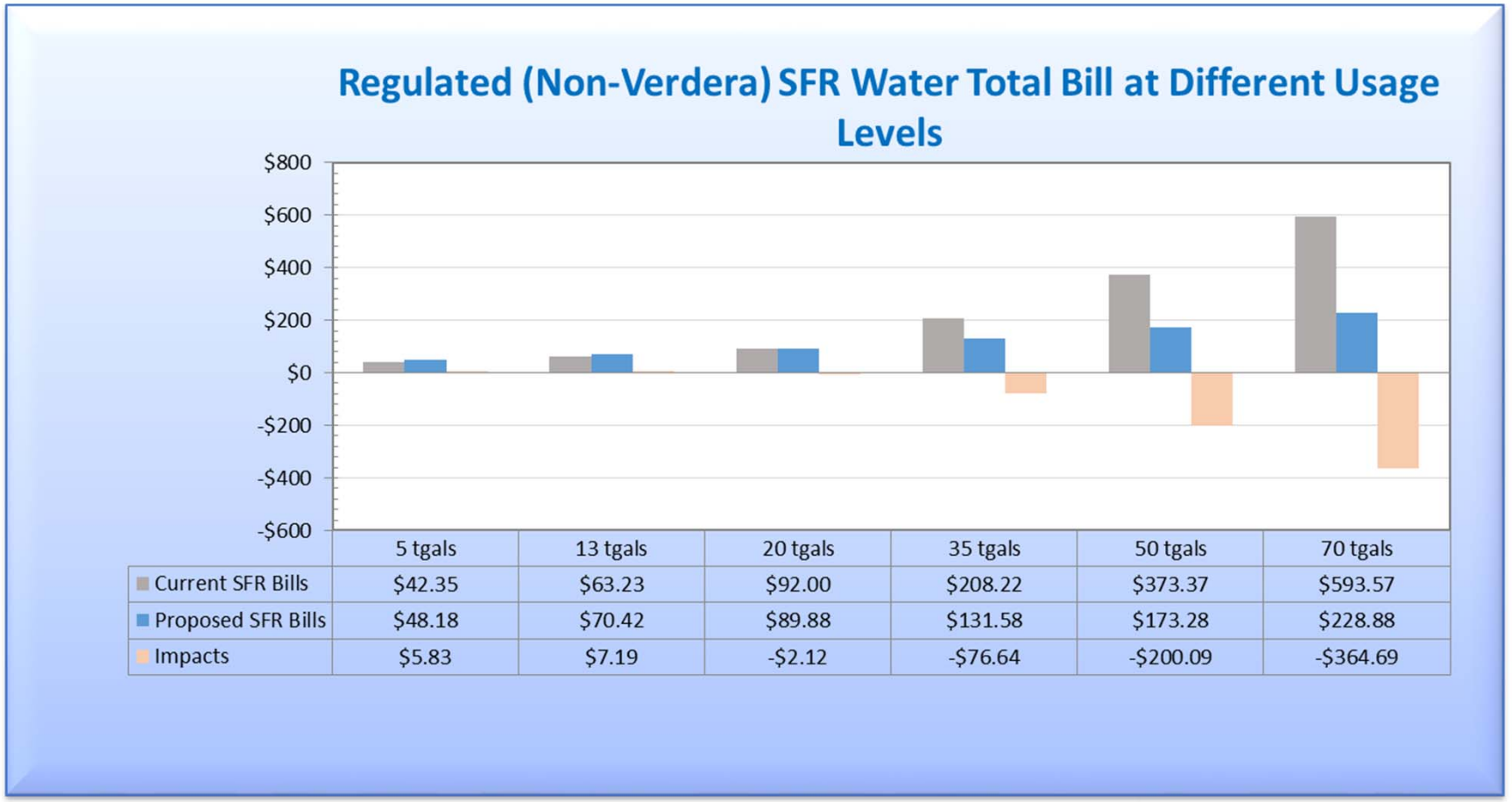
VERDERA CUSTOMERS (1.5X)



VERDERA CUSTOMERS (2.5X)

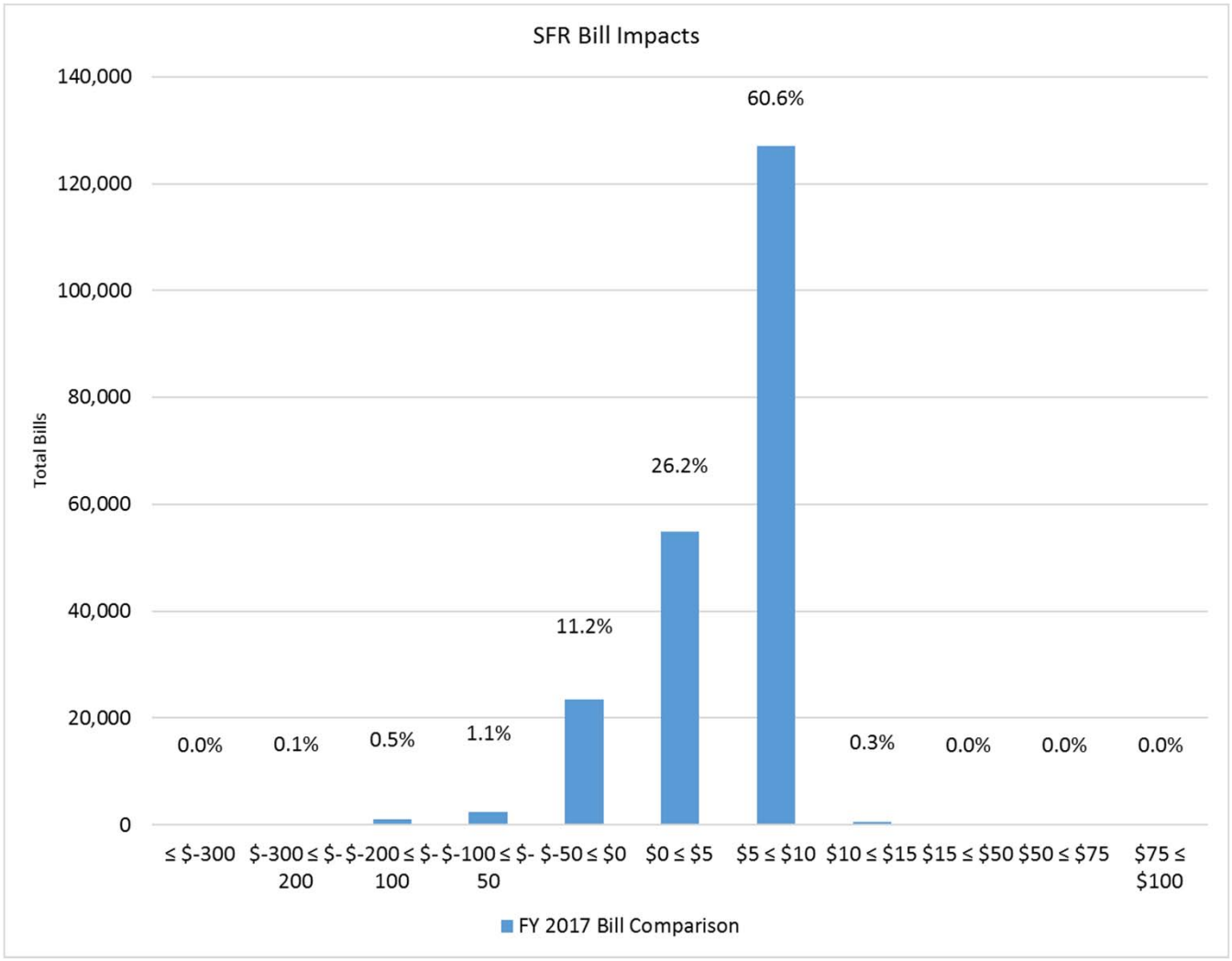


SFR Regulated (Non-Verdera) Bill Comparison – Uniform

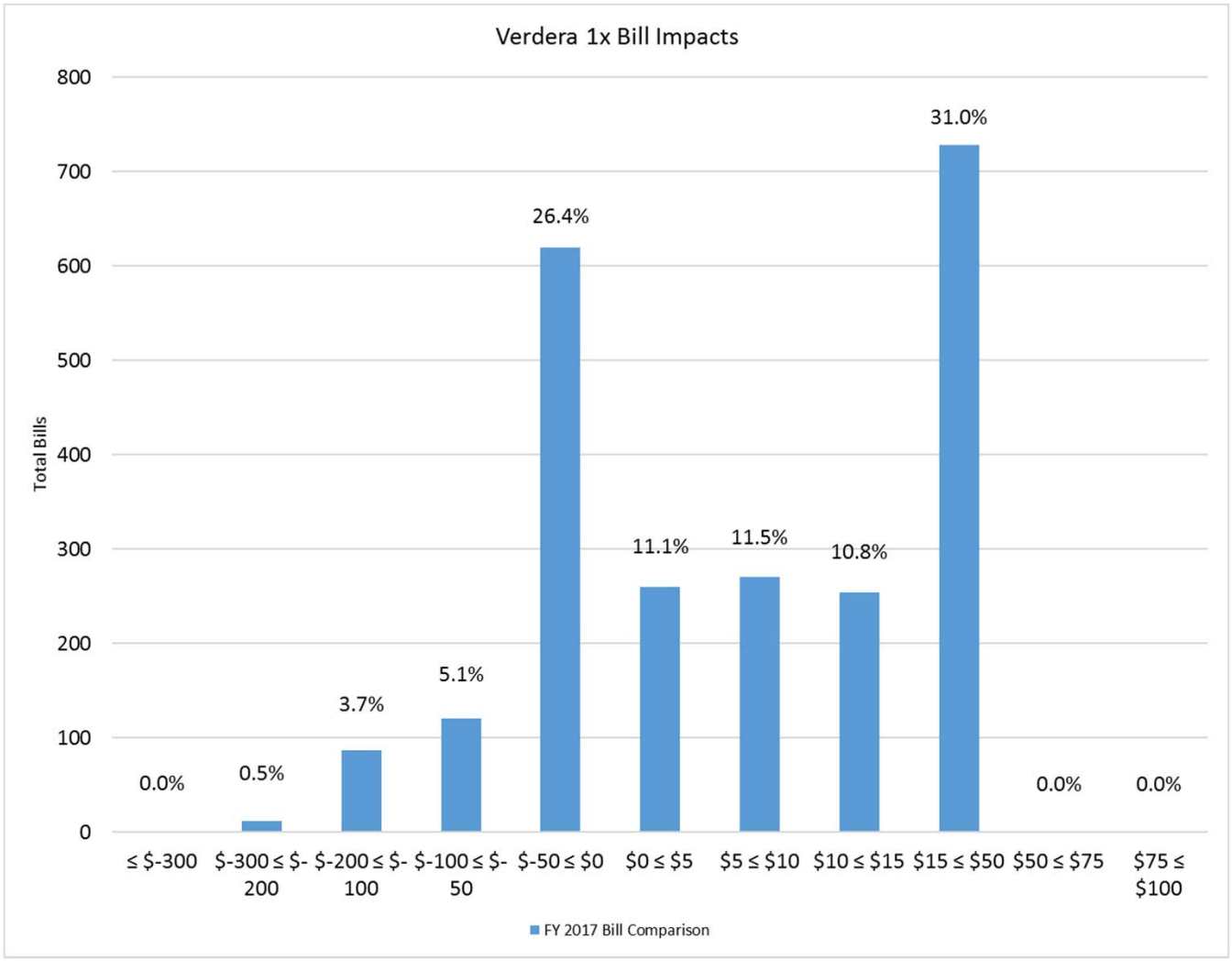


	5 tgals	13 tgals	20 tgals	35 tgals	50 tgals	70 tgals
Current SFR Bills	$42.35	$63.23	$92.00	$208.22	$373.37	$593.57
Proposed SFR Bills	$48.18	$70.42	$89.88	$131.58	$173.28	$228.88
Impacts	$5.83	$7.19	-$2.12	-$76.64	-$200.09	-$364.69

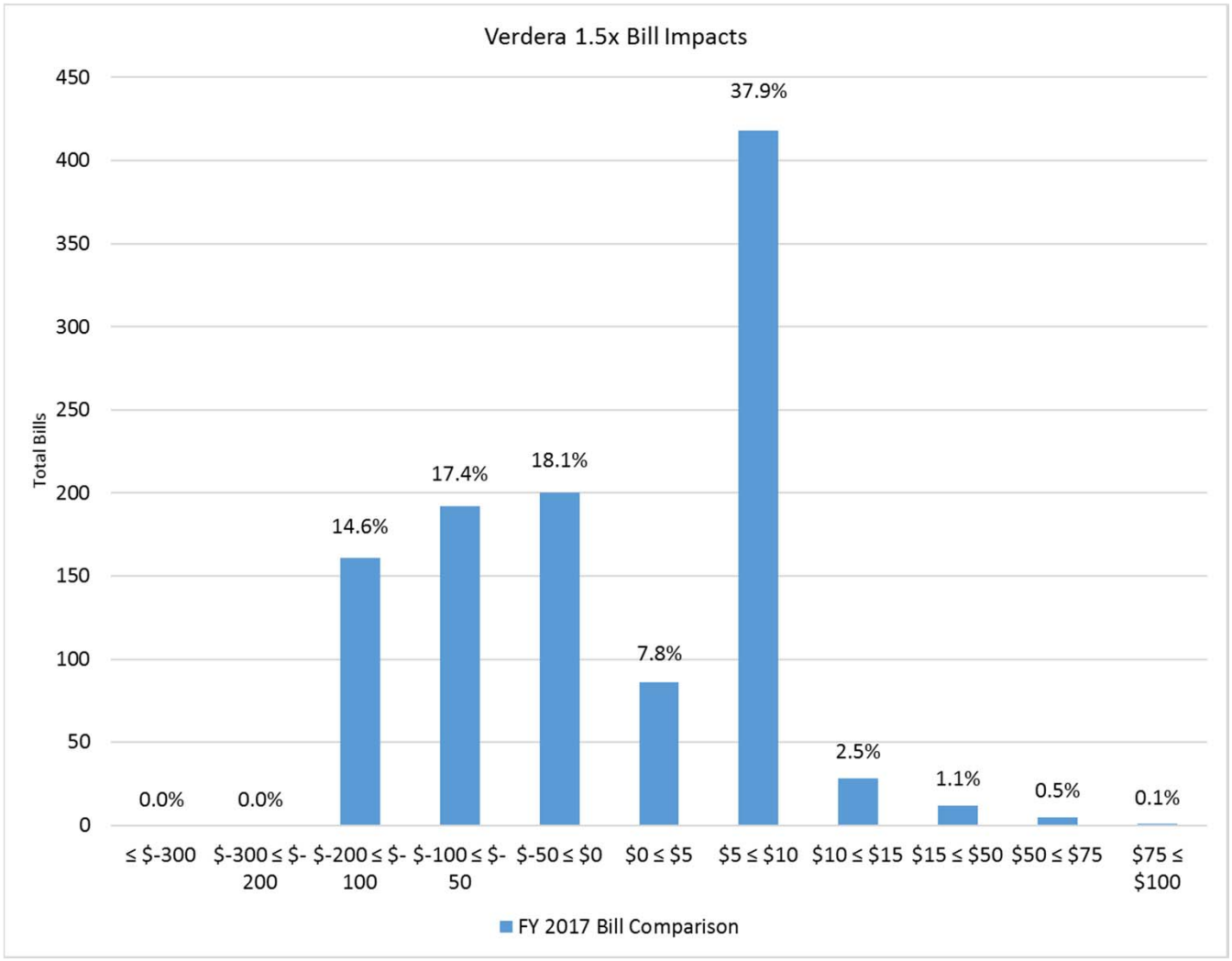
Residential (SFR Non-Verdera) Bill Impacts – Uniform



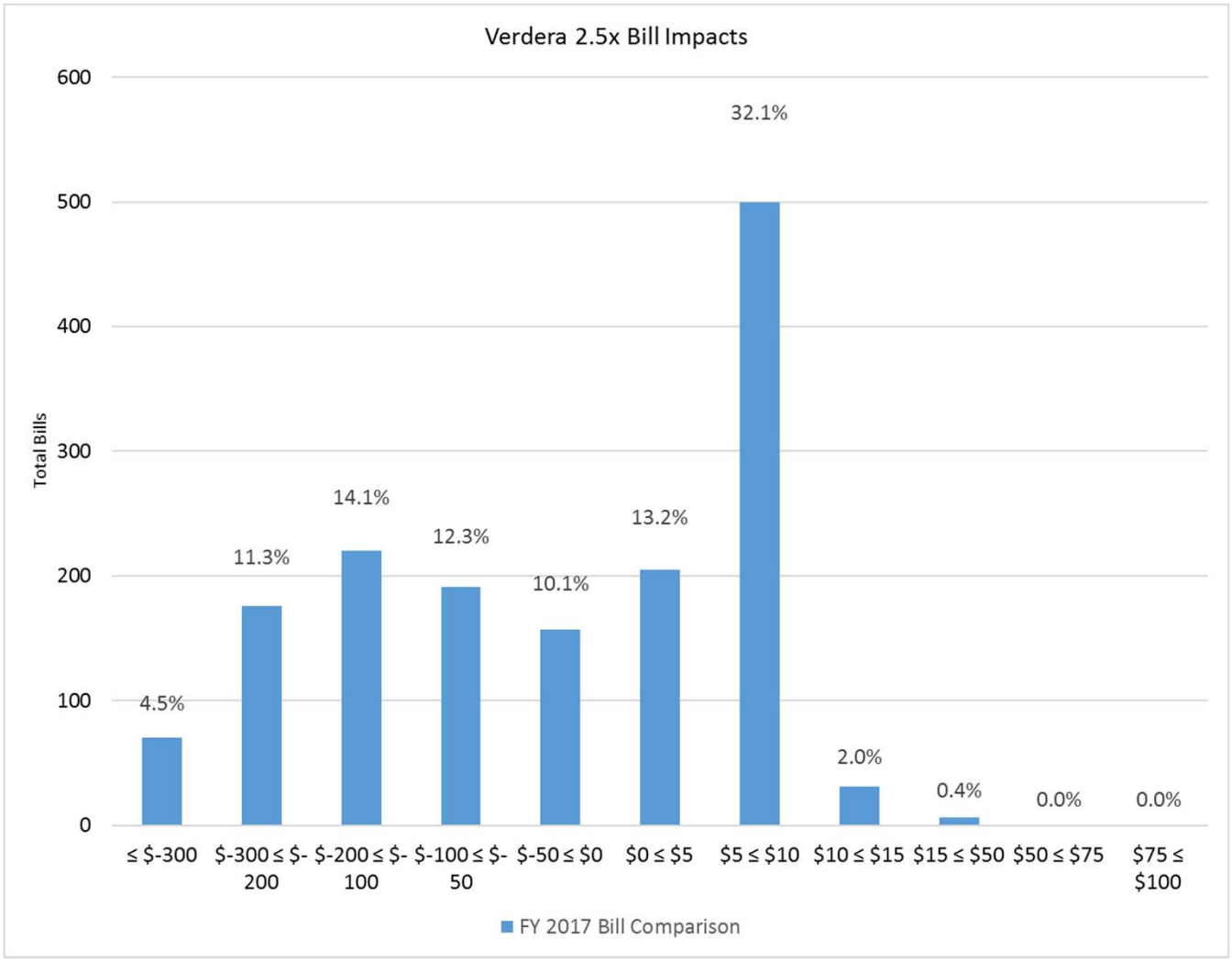
VERDERA 1X BILL IMPACTS – 2 TIERS



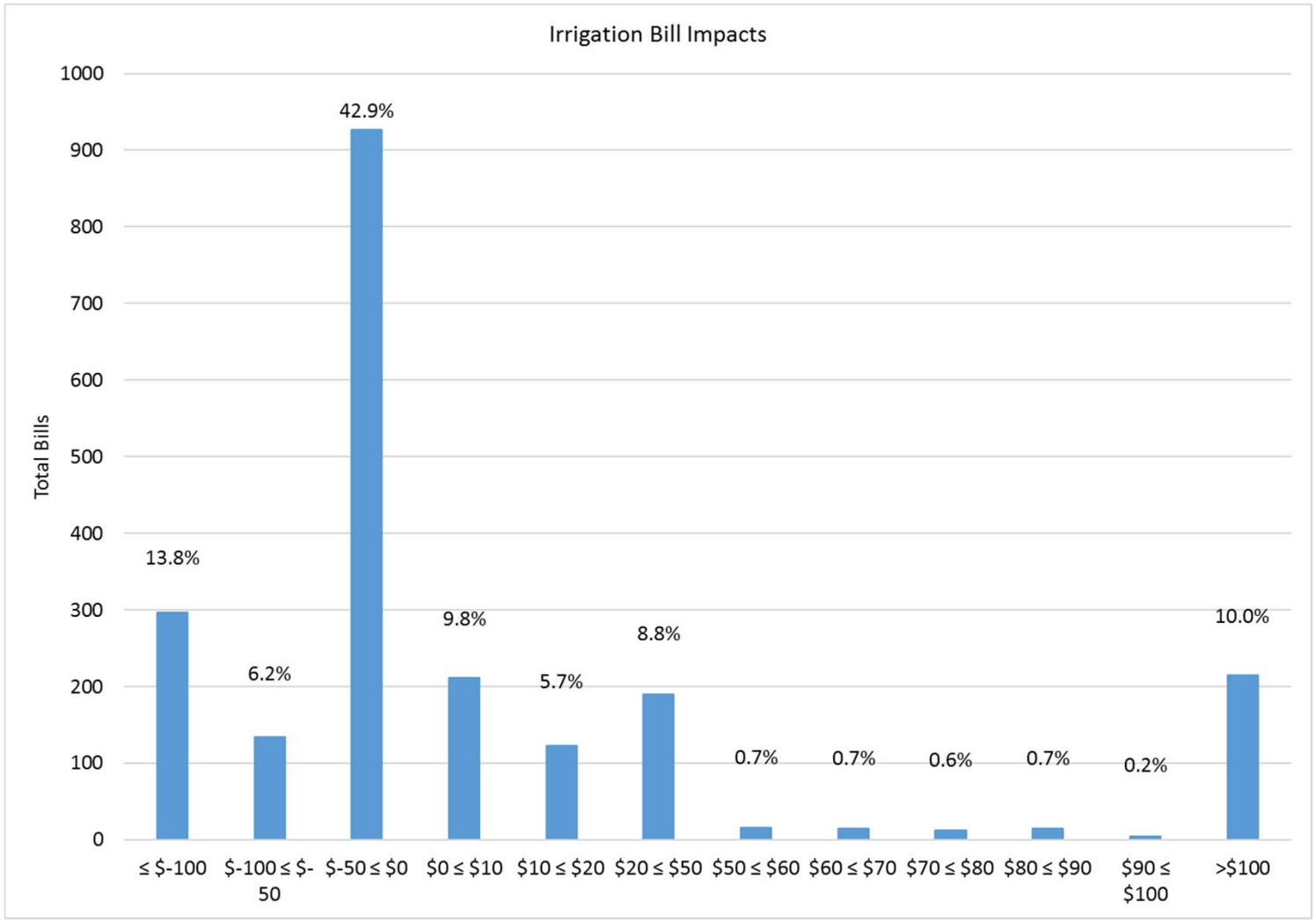
VERDERA 1.5X BILL IMPACTS – 2 TIERS



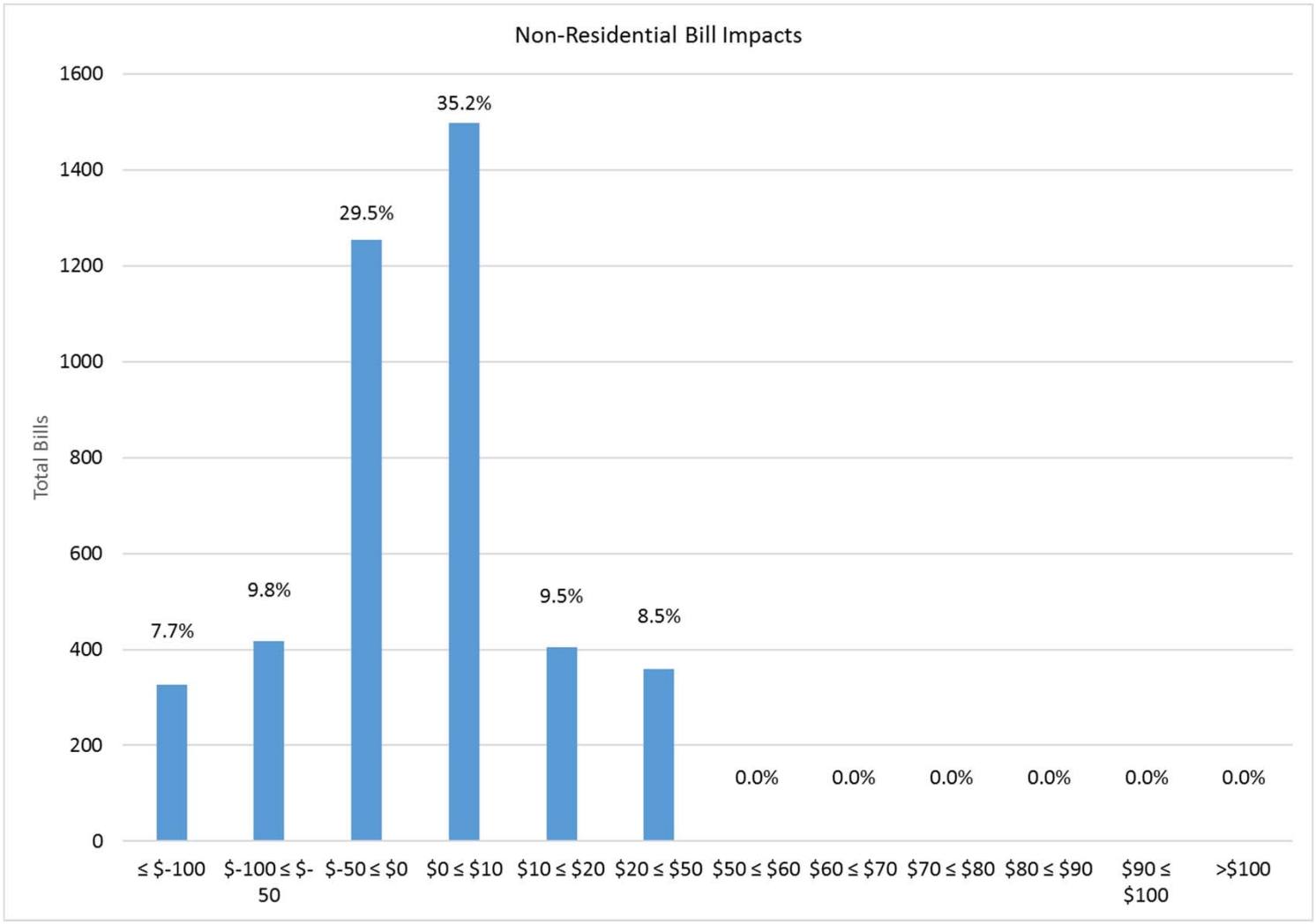
VERDERA 2.5X BILL IMPACTS – 2 TIERS



Proposed Rate – Irrigation Impacts



Proposed Rate – Non-Residential Impacts



PROPOSED RATE – MFR IMPACTS